

**In the Drawings**

Enclosed is a copy of drawing sheet 1/3 indicating proposed changes to Figs. 2, 3 and 4 shown in red ink.

**Remarks**

Examiner Vinh is thanked for the thorough Examiner's Answer.

**In the Drawings**

The Examiner is requested to approve the proposed changes to the drawings indicated in red ink to sheet 1/3 on Figs. 2, 3 and 4 submitted herewith.

**In the Claims**

The claims have not been further amended.

**Claim Rejections**

The following are the pending rejections to the claims.

**The Rejection Of Claims 1 To 7 And 9 To 11 Under 35 U.S.C. §103(a) as Being Unpatentable Over Zhao et al. (U.S. Patent No. 6,100,184) In View Of Hsiao (U.S. Patent No. 5,968,842)**

The rejection of claims 1 to 7 and 9 to 11 under 35 U.S.C. §103(a) as being unpatentable over Zhao et al. (U.S. Patent No. 6,100,184) (the '184 Zhao Patent) in view of Hsiao (U.S. Patent No. 5,968,842) (the '842 Hsiao Patent) is acknowledged.

**The Rejection Of Claims 12 To 20 Under 35 U.S.C. §103(a) as Being Unpatentable Over Zhao et al. (U.S. Patent No. 6,100,184) In View Of Hsiao (U.S. Patent No. 5,968,842) And Further In View Of Cronin et al. (U.S. Patent No. 5,759,911)**

The rejection of claims 12 to 20 under 35 U.S.C. §103(a) as being unpatentable over Zhao et al. (U.S. Patent No. 6,100,184) (the '184 Zhao Patent) in view of Hsiao (U.S. Patent No. 5,968,842) (the '842 Hsiao Patent) and further in view of Cronin et al. (U.S. Patent No. 5,759,911) (the '911 Cronin Patent) is acknowledged.

Applicants' wish to briefly point up the claimed features of their invention which are believed to be not shown nor obvious from the teachings of known references in this field. The claims all clearly define forming a first lower sub-layer 20 and a second upper sub-layer 22 over a substrate 10 to provide a composite etch stop layer 20, 22. An IMD layer 24 is formed over the composite etch stop layer 20, 22 and a patterned photoresist mask layer 26 is formed over the IMD layer 24. A first etching method 30 is used to etch through the IMD layer 24 and the second upper sub-layer 22

to the first lower sub-layer 20 (using the patterned photoresist layer 26 as a mask). A second etch method 31 is used to etch the lower sub-layer 20.

The '184 Zhao Patent discloses a method of making a dual damascene interconnect structure. However, Zhao disclosed a dielectric separation layer/barrier layer 13 formed over an interconnect 10 and an ILD layer 11. (Col. 5, lines 53 to 66) Dielectric separation layer/barrier layer 13 is not disclosed as being an etch stop layer. A first low-k dielectric layer 14 is formed over dielectric separation layer 13 and a patterned etch stop layer 15 is formed over first dielectric layer 14. Applicants submit that layer 15 is not an "ILD layer" to one skilled in the art but is, in fact, an etch stop layer as Zhao teaches. Further, at Col. 7, lines 11 and 12, Zhao states "...the three dielectric layers 13, 15 and 19 form the boundaries for the two ILD layers 14 and 18." Thus "dielectric layer" 15 is not an ILD layer as are "ILD layers 14 and 18."

At Col. 7, lines 36 to 46, Zhao discloses that an anisotropic etch "will continue to etch the exposed low- $\epsilon$  material in both of the ILD layers 14 and 18, but will not etch away the dielectric *etch-stop layers 15 and 19*." Then the etch chemistry is changed to etch the exposed portion of the separation layer 13 at the bottom of the via 24 but not etch the "two etch-stop layers 15 and 19 and the ILD material underlying them." Col. 7, lines 55 to 62.

The Examiner cites the '842 Hsiao Patent as disclosing "a composite polish stop layer/etch stop layer [that] includes two sub-layers 32 and 34 (silicon nitride and oxynitride) (col 6, lines 43-46). That teaching reads on forming a composite etch

stop layer [including] two sub-layers." Instant Office Action, page 3, line 22 to page 4, line 2.

Applicants respectfully disagree with: (1) that Hsiao may be combined with Zhao; and (2) that Hsiao discloses a two sub-layer etch stop layer.

As to (1), Hsiao is directed to formation of a shallow trench isolation (STI) structure and techniques for reducing dishing in chemical mechanical polishing. Thus, one skilled in the art would have no motivation in combining Zhao with Hsiao, or in modifying Zhao with the teachings of Hsiao, as Zhao is directed to a method of making a dual damascene interconnect which is disparate from Hsiao.

As to (2), the Examiner cites Hsiao as disclosing a "polish stop layer/*etch stop layer*" including two sub-layers 32, 34. (emphasis added) The Hsiao layers 32, 34 do not function as etch stop layers. Figs. 5 and 6 of Hsiao illustrate that polish stop layers 34, 32 are etched through, as is a portion of the underlying substrate 30 to form a trench. Thus, polish stop layers 34, 32 do not function, singularly or in combination, as an etch stop layer(s) but function, as named, as polish stops when a TEOS oxide layer 42 is deposited with the trench and is then polished and removed using an oxide CMP process that "stops at or not far below the original surface of the buffer polish stop layer 34..." Col. 7, lines 8 to 31

Therefore independent claim 1 distinguishes over the '184 Zhao Patent in view of the '842 Hsiao Patent under §103(a); and independent claim 12 distinguishes

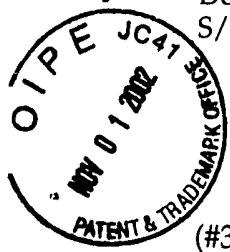
over the '184 Zhao Patent in view of the '842 Hsiao Patent and further in view of the '911 Cronin Patent under §103(a); for the above reasoning and further: the prior art lack a suggestion that the reference should be modified in a manner required to meet the claims; up to now those skilled in the art never appreciated the advantage of the invention, although it is inherent; Hsaio is a poor reference; the Examiner misunderstood the Hsaio; the Examiner has made a strained interpretation of the references that could be made only by hindsight; the Examiner has not presented a convincing line of reasoning as to why the claimed subject matter as a whole, including its differences over the prior art, would have been obvious; and the prior art references do not contain any suggestions (express or implied) that they be combined, or that they be combined in the manner suggested.

Claims 2 to 11 depend, directly or indirectly, from independent claim 1; and claims 13 to 20 depend, directly or indirectly, from independent claim 12; and are believed to distinguish over the combination for the reasons previously cited.

Therefore claims 1 to 20 are submitted to be allowable over the cited references and reconsideration and allowance are respectfully solicited.

### CONCLUSION

In conclusion, reconsideration and withdrawal of the rejections are respectively requested. Allowance of all claims is requested. Issuance of the application is requested.



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It is requested that the Examiner telephone Stephen G. Stanton, Esq. (#35,690) at (610) 296 - 5194 or the undersigned attorney/George Saile, Esq. (#19,572) at (845) 452 - 5863 if the Examiner has any questions or issues that may be resolved to expedite prosecution and place this Application in condition for Allowance.

Respectively submitted,

Stephen B. Ackerman

Reg. No. 37,761

## 201.08 Continuation-in-Part Application [R-1]

A continuation-in-part is an application filed during the lifetime of an earlier nonprovisional application \*\*, repeating some substantial portion or all of the earlier nonprovisional application and *adding matter not disclosed* in said earlier nonprovisional application. (*In re Klein*, 193 C.D. 2, 393 O.G. 519 (Comm'r Pat. 1930)). The continuation-in-part application may only be filed under 37 CFR 1.53(b).

A continuation-in-part application CANNOT be filed as a continued prosecution application (CPA) under 37 CFR 1.53(d).

An application claiming the benefits of a provisional application under 35 U.S.C. 119(e) should not be called a "continuation-in-part" of the provisional application since the application will have its patent term calculated from its filing date, whereas an application filed under 35 U.S.C. 120, 121, or 365(c) will have its patent term calculated from the date on which the earliest application was filed, provided a specific reference is made to the earlier filed application(s), 35 U.S.C. 154(a)(2) and (a)(3).

The mere filing of a continuation-in-part does not itself create a presumption that the applicant acquiesces in any rejections which may be outstanding in the copending nonprovisional application or applications upon which the continuation-in-part application relies for benefit.

A continuation-in-part filed by a sole applicant may also derive from an earlier joint application showing a portion only of the subject matter of the later application, subject to the conditions set forth in 35 U.S.C. 120 and 37 CFR 1.78. Subject to the same conditions, a joint continuation-in-part application may derive from an earlier sole application.

Unless the filing date of the earlier nonprovisional application is actually needed, for example, in the case of an interference or to overcome a reference, there is no need for the Office to make a determination as to whether the requirement of 35 U.S.C. 120, that the earlier nonprovisional application discloses the invention of the second application in the manner provided by the first paragraph of 35 U.S.C. 112, is met and whether a substantial portion of all of the earlier nonprovisional application is repeated in the second application in a continuation-in-part situation. Accordingly, an alleged continuation-in-part application should be permitted to claim the benefit of the filing date of an earlier nonprovisional application if the alleged continuation-in-part application complies with the following formal requirements of 35 U.S.C. 120:

(A) The first application and the alleged continuation-in-part application were filed with at least one common inventor;

(B) The alleged continuation-in-part application was filed before the patenting or abandonment of or termination of proceedings on the first application or an application commonly entitled to the benefit of the filing date of the first application; and

(C) The alleged continuation-in-part application "contains or is amended to contain a specific reference to the earlier filed application."

The notation to be put on the file wrapper by the examiner in the case of a continuation-in-part application see MPEP § 202.02. See MPEP § 708 for order of examination.

Use Form Paragraph 2.06 to remind applicant of possible continuation-in-part status.

### 2.06 Possible Status as Continuation-in-Part

An application repeats a substantial portion of prior Application No. [1], filed [2], and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

#### Examiner Note:

This paragraph should only be used when it appears that the application may qualify as a continuation-in-part, but no priority claim has been filed.

An application claiming the benefits of a provisional application under 35 U.S.C. 119(e) should not be called a "continuation" of the provisional application since the application will have its patent term calculated from its filing date, whereas an application filed under 35 U.S.C. 120, 121, or 365(c) will have its term calculated from the date on which the earliest application was filed, provided a specific reference is made to the earlier filed application(s), 35 U.S.C. 154(a)(2) and (a)(3).

## 201.09 Substitute Application

The use of the term "Substitute" to designate any application which is in essence the duplicate of an application by the same applicant abandoned before the filing of the later application, finds official recognition in the decision *Ex parte Komenak*, 1940 C.D. 1, 512 O.G. 739 (Comm'r Pat. 1940). Current practice does not require applicant to insert in the specification reference to the earlier application; however, attention should be called to the earlier application. The notation on the file wrapper (see MPEP § 202.02) that one application is a "Substitute" for another is printed in the heading of the patent copies. See MPEP § 202.02.

As is explained in MPEP § 201.11, a "Substitute" does not obtain the benefit of the filing date of the prior application.

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